

AN3130

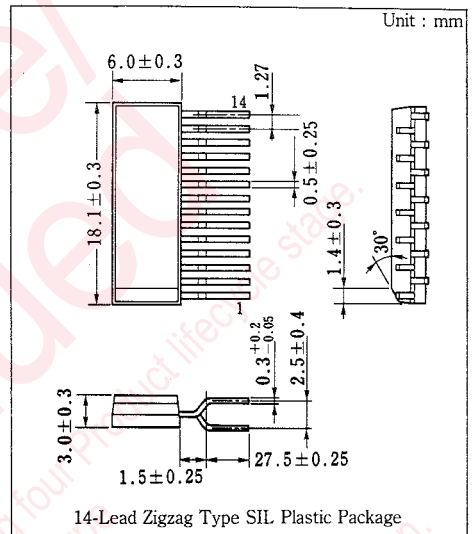
RF Converter Circuit

■ Outline

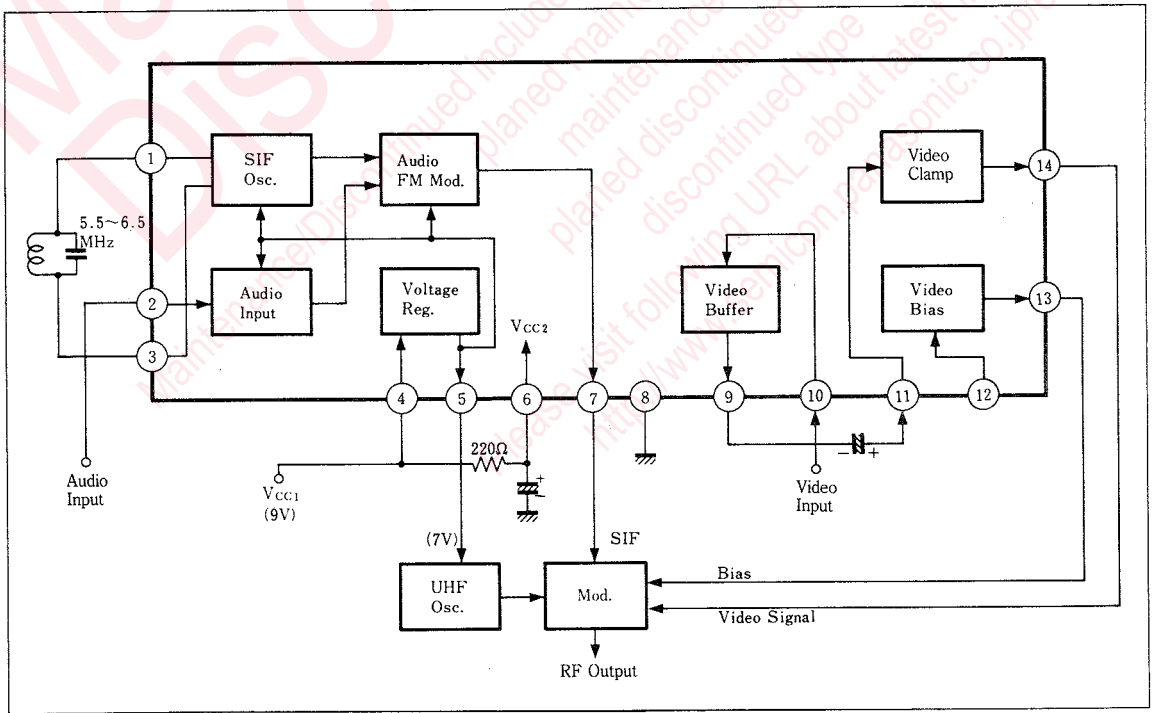
The AN3130 is an integrated circuit designed for an RF converter intended for a PAL region.

■ Features

- Incorporating a video buffer amp., sync. is not shortened.
- Voltage regulator.
- Variable video bias is supplied.



■ Block Diagram



■ Pin

Pin No.	Pin Name	Pin No.	Pin Name
1	SIF Osc. (1)	8	GND
2	Audio Input	9	Video Buffer Output
3	SIF Osc. (2)	10	Video Input
4	Vcc1	11	Video Clamp Input
5	Voltage Reg. Output	12	Video Bias Adj.
6	Vcc2	13	Video Bias Output
7	SIF Output	14	Video Output

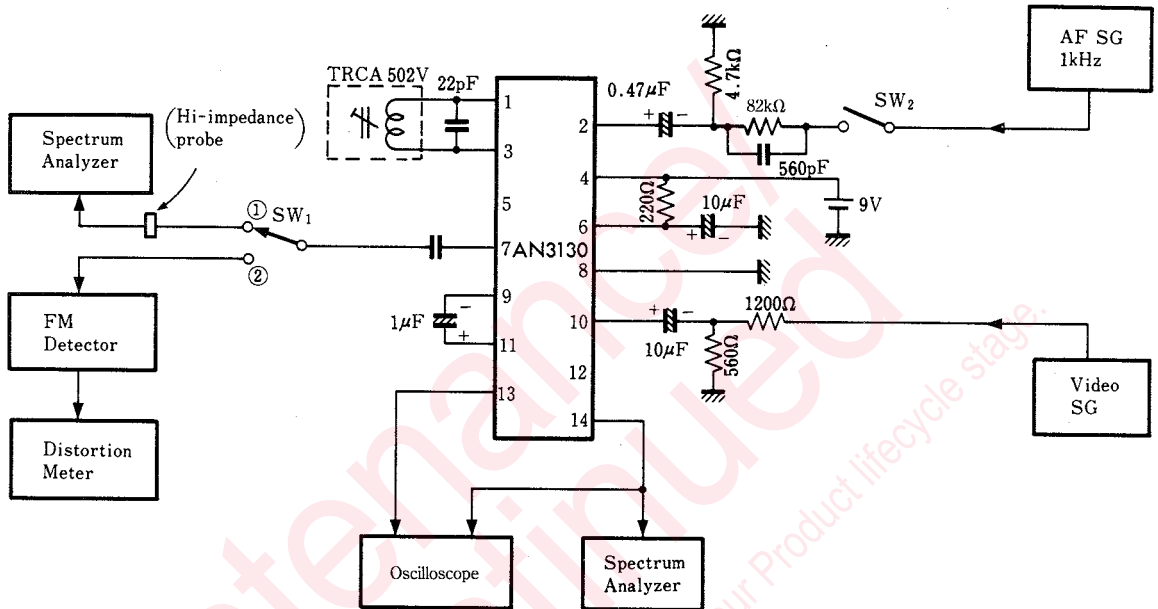
■ Absolute Maximum Ratings (Ta=25°C)

Item	Symbol	Rating	Unit
Supply voltage	V _{CC}	12	V
Supply current	I _{CC}	50	mA
Power dissipation	P _D	600	mW
Operating ambient temperature	T _{opr}	-20 ~ +70	°C
Storage temperature	T _{stg}	-55 ~ +150	°C

■ Electrical Characteristics (Ta=25°C)

Item	Symbol	Test Circuit	Condition	min.	typ.	max.	Unit.
Supply current	I _{CC}	1		12	16.5	21	mA
Stabilized power output	V _s	1		6.5	7.0	7.5	V
Stabilized power stability	ΔV _s	1	V _{CC} =8~10V	-0.2		+0.2	V
Video modulation degree	m	1	Pin⑫ Open	77.5	82.5	87.5	%
Video output amplitude	v _O	1	V _{in} =0.6V _{P-P}	0.58	0.60	0.62	V _{P-P}
Sync. distortion	Sync	1		-3.0		0	%
Sag	Sug	1		-4		+4	%
SIF frequency	f _s	1		5.40	5.50	5.60	MHz
SIF output level	V _{SIF}	1	Pin⑦ Open	108	109	110	dBμ
Sound FM modulation sensitivity	Δf _{FM}	1		±35	±50	±65	kHz
Sound FM modulation distortion	THD	1				1.0	%

Test Circuit 1



Measuring Conditions List

Item	Input Condition		Measuring Method	SW	
	Video SG	AF SG		1	2
m	10-step wave 2V _{P-P}	—	$m = \frac{b}{a} \times 100$ $V_0 = b$	—	—
V ₀	10-step wave 2V _{P-P}	—		—	—
Sync	S/V=3/7 2V _{P-P}	—	Sync. distortion = $\frac{1}{3} (7 \cdot \frac{\text{Sync.}}{\text{Video}} - 3) \times 100$	—	—
Sug	Square wave 2V _{P-P}	—	Sag = $\frac{\text{Sag}}{\text{Total amplitude}} \times 100$	—	—
f _s	—	—	Measure the output signal frequency of the Pin ⑦.	①	—
V _{SIF}	—	—	Measure a 5.5 MHz output level with a spectrum analyzer.	①	—
Δf _{FM}	—	400Hz 0.5V _{rms}	Read a modulation degree.	②	ON
THD	—	400Hz 0.5V _{rms}	Measure with a distortion gauge.	②	ON

Request for your special attention and precautions in using the technical information and semiconductors described in this book

- (1) If any of the products or technical information described in this book is to be exported or provided to non-residents, the laws and regulations of the exporting country, especially, those with regard to security export control, must be observed.
- (2) The technical information described in this book is intended only to show the main characteristics and application circuit examples of the products. No license is granted in and to any intellectual property right or other right owned by Panasonic Corporation or any other company. Therefore, no responsibility is assumed by our company as to the infringement upon any such right owned by any other company which may arise as a result of the use of technical information described in this book.
- (3) The products described in this book are intended to be used for standard applications or general electronic equipment (such as office equipment, communications equipment, measuring instruments and household appliances).
Consult our sales staff in advance for information on the following applications:
 - Special applications (such as for airplanes, aerospace, automobiles, traffic control equipment, combustion equipment, life support systems and safety devices) in which exceptional quality and reliability are required, or if the failure or malfunction of the products may directly jeopardize life or harm the human body.
 - Any applications other than the standard applications intended.
- (4) The products and product specifications described in this book are subject to change without notice for modification and/or improvement. At the final stage of your design, purchasing, or use of the products, therefore, ask for the most up-to-date Product Standards in advance to make sure that the latest specifications satisfy your requirements.
- (5) When designing your equipment, comply with the range of absolute maximum rating and the guaranteed operating conditions (operating power supply voltage and operating environment etc.). Especially, please be careful not to exceed the range of absolute maximum rating on the transient state, such as power-on, power-off and mode-switching. Otherwise, we will not be liable for any defect which may arise later in your equipment.
 - Even when the products are used within the guaranteed values, take into the consideration of incidence of break down and failure mode, possible to occur to semiconductor products. Measures on the systems such as redundant design, arresting the spread of fire or preventing glitch are recommended in order to prevent physical injury, fire, social damages, for example, by using the products.
- (6) Comply with the instructions for use in order to prevent breakdown and characteristics change due to external factors (ESD, EOS, thermal stress and mechanical stress) at the time of handling, mounting or at customer's process. When using products for which damp-proof packing is required, satisfy the conditions, such as shelf life and the elapsed time since first opening the packages.
- (7) This book may be not reprinted or reproduced whether wholly or partially, without the prior written permission of our company.